

Abstract of the Disclosure

A microfluidic device for controlling the flow of a micro amount of fluid is provided. The microfluidic device is manufactured by binding a sensing substrate including a sensing electrode, an electrode interconnect, and an electrode pad, with a channel substrate including at least two fluid inlet ports, a chamber, and a channel, wherein a first fluid injected via one of the fluid inlet ports flows by natural capillary force, and a second fluid injected via another fluid inlet port is forced to flow by an external pump. The microfluidic device controls fluid flow and flow stoppage by a combination of natural capillary flow and an externally applied pressure as a result of the action of a pump.